

IARPA N2N Challenge NIST Image Standards

For all images acquired by the participant's sensor, an image shall be persisted to permanent storage provided by the participant.

The image shall:

- be in lossless JPEG-2000 format.
- if compressed, only use lossless compression.
- be named in the format `<sensorID>_<sessionID>_<subjectID>_<fingerPosition>.jp2`.
- be placed in the directory `/export/jpeg2000/`.
- be usable as-is with existing commercial template generation and template matching algorithms.
- contain 8- or 16-bits per channel.
 - 9—15 bits-per channel shall be padded to 16-bits per channel.
- contain *at least* 500 pixels per inch.
- contain a JPEG-2000 *resc* information box indicating the capture resolution.
- contain a JP2 Image Header information box containing at least width (*Xsiz*), height (*Ysiz*), bit depth (*Ssiz*), and color space (*colr*).

The system shall:

- only write one image per subjectID/sessionID/fingerPosition combination in the *export* directory.
- write at most one proprietary file per subjectID/sessionID/fingerPosition combination.
 - `/export/proprietary/<sensorID>_<sessionID>_<subjectID>_<fingerPosition>.tem`
- only write proprietary files if a custom template generation and template matching algorithm adhering to the N2N Fingerprint Grand Prize Challenge API is submitted.
- only write files for fingerPosition 1—10.
 - No “slap” or otherwise non-segmented finger positions shall be saved.
- not encode information other than what is sensed from the device.
 - The subject ID shall be in the filename only, and may be changed when provided to template generation and template matching algorithms.
- complete writes of all files for one finger or set of fingers before acquiring the next finger or set of fingers.
- allow access by test administrators for retrieval of files at any time.
- write a 0-byte file in the event of a failure to acquire for both standardized image and proprietary file.

NIST suggests following the guidance for lossless fingerprint compression from NIST SP 500-289. Please note that many commercial template generation algorithms may down sample images to 500 ppi, 8-bits per channel, and/or grayscale. If these limitations are not acceptable, please consider submitting your own template generation and template matching algorithm.